

Funding Opportunity: Category Two	Applicant Organization: The Sierra Fund
Task: Submit Application Non-EO	Applicant Name: Ms. Elizabeth Martin



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PROJECT CONTACT INFORMATION		
Name	Ms. Elizabeth Martin,	
Title		
Organization	The Sierra Fund	
Primary Address	432 Broad Street, , , Nevada City, CA, 95959	
Primary Phone/Fax	530-265-8454 <b>Ext.</b> 11	
Primary Email	izzy.martin@sierrafund.org	



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PROJECT INFORMATION		
Project Title	Humbug Creek Watershed Assessment and Management Plan	
Brief Description	The purpose of the Humbug Creek Watershed Assessment and Management Plan is to develop a plan and acquire necessary permits to implement recommended activities to address the problems of turbidity, mercury, and physical hazards in the Humbug Creek watershed that result from historic mining activities. This is an area of the popular Malakoff Diggins State Historic Park that was home to the largest hydraulic mine in the world. The goal of the Humbug Creek Watershed Assessment and Management Plan is to develop a comprehensive plan to address the water quality and safety impairments in the watershed, while maintaining the cultural significance and integrity of the site.	
Total Requested Amount	197,592.00	
Other Fund Proposed	37,500.00	
Total Project Cost	235,092.00	
Project Category	Planning	
Project Area/Size	N/A	
Project Area Type	Not Applicable	
Have you submitted to SNC this fiscal year?	No	
Is this application related to other SNC funding?	No	

Project Results		
Plan		



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Project Purpose	Project Purpose Percent
Water Quality	

County	
Nevada	

Sub Region	
Central	



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## PROJECT OTHER CONTACTS INFORMATION

**Other Grant Project Contacts** 

Name: Ms. Elizabeth Martin, Project Role: **Authorized Representative** 

Phone: 5302658454

Phone Ext: 14

E-mail: izzy.martin@sierrafund.org

Name: Dr. Monohan Carrie,

Day-to-Day Responsibility Project Role:

5302658454 Phone:

Phone Ext: 14

E-mail: carrie.monohan@sierrafund.org

Mr. Rick Haffey, Name:

Project Role: County Administration

0000000 Phone:

Phone Ext:

E-mail: ceo@co.nevada.ca.us

Name: District Nevada Irrigation, Project Role: Water Agency 1 Contact

5302736185

Phone:

Phone Ext:

E-mail: nelson@nidwater.com

Agency Yuba County Water, Name:

Project Role: Water Agency 2 5307416278 Phone:

Phone Ext:

E-mail: info@ywca.com



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# PROJECT LOCATION INFORMATION

**Project Location** 

Address: 21625 & 22270 N. Bloomfield-Graniteville Rd., , , Nevada

City, CA, 95959 United States

Water Agency: Nevada Irrigation District

Latitude: 39.3536367296017 Longitude: -120.923905505748

Congressional District: na Senate: na Assembly: na Within City Limits: No

City Name:



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# PROJECT BUDGET INFORMATION

# Direct

Description	Num of Units	Per Unit Cost	Total
Mining Science Project Director - Carrie Monohan, Ph.D.	474	80.00	37,920.00
Mining Project Director - Elizabeth Martin, CEO	64	85.00	5,440.00
TSF organize meetings (TSF admin staff)	128	50.00	6,400.00
Grant reporting, billing & admin	50	60.00	3,000.00
TSF Staff Travel to Humbug Site	1000	.50	500.00
Agency Staff Travel to meetings & site	8	100.00	800.00
Community Watershed Group (SYRCL)	76	50.00	3,800.00
State Parks	290	80.00	23,200.00



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Larry Walker & Assoc., Holdredge & Kull consultants	464	50.00	23,200.00
Planning Documents & Supplies	12	75.00	900.00
Lab costs (Brooks Rand Laboratories)	30	110.00	3,300.00
Consultants & Fees	1	50,000.00	50,000.00

Total Direct	158,460.00
Direct Detail	

## Indirect

Description	Num of Units	Per Unit Cost	Total
Volunteer Engagement (SYRCL)	1	5,000.00	5,000.00
Watershed Excursions Program (State Parks)	1	1,000.00	1,000.00
Watershed Excursions Program (SYRCL)	1	2,000.00	2,000.00
Performance Measure Reporting	20	60.00	1,200.00



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(TSF)		

Total Indirect	9,200.00
Indirect Detail	

# Administrative

Description	Num of Units	Per Unit Cost	Total
TSF 13% Overhead	1	22,732.00	22,732.00

Total Administrative	22,732.00
Administrative Detail	

**Budget Grant Total: 190,392.00** 



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## PROJECT OTHER SUPPORT INFORMATION

Other Support for the Sierra Nevada

Type: Project Funds Other

Estimated Amount: 2,000.00

Estimated Volunteer Hours: 0

Source: TSF Outreach & Communications

Source Type: Other Status: Pledged

Description: Californial Wellness. Status is "Confirmed."

Type: Major In-Kind Contri

Estimated Amount: 14,000.00

Estimated Volunteer Hours: 148

Source: Department of Toxic Substances

Source Type: Other State Status: Pledged

Description: 148 hrs. at \$95. Status is "Confirmed."

Type: Major In-Kind Contri

Estimated Amount: 7.500.00

Estimated Volunteer Hours: 25

Source: SYRCL Storm Water Monitoring & Inter-Guild work

Source Type: Other Status: Pledged

Description: 25 hrs. at \$200. Status is "Confirmed."

Type: Major In-Kind Contri

Estimated Amount: 14.000.00

Estimated Volunteer Hours: 148

Source: Other Working Group member Agencies; SWRCB,

USGS, DOC

Source Type: Other



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Status: Pledged
Description: 148 hrs. at \$95. Status is "Confirmed."

Estimated Total Amount of	37,500.00
Resources Leveraged	



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# PROJECT REGULATORY REQUIREMENTS

**Regulatory Requirements** 



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## PROJECT TIMELINE INFORMATION

**Project Timeline** 

Milestone/Activity: Draft Watershed Assessment for review by advisors

Description: June 2011 Expected Date: 06/30/2011

Deliverable: True

Milestone/Activity: Draft Management Plan for review by advisors

Description: April 2012 Expected Date: 04/30/2012

Deliverable: True

Milestone/Activity: Final Watershed Assessment & Management Plan

Description: August 2012 Expected Date: 08/31/2012

Deliverable: True

Milestone/Activity: Contracts for Permitting Activities

Description: August 2012 Expected Date: 08/31/2012

Deliverable: True



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# PROJECT PEER REVIEWER INFORMATION

Reviewers		



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# **UPLOADS**

The following pages contain the following uploads provided by the applicant:

Upload Name
Completed Checklist
Table of Contents
Application Form
Authorization to Apply or Resolution
Articles of Incorporation (Non-Profit Organization
IRS Tax Letter (Non-Profit Organizations Only)
Project Summary
Evaluation Criteria Narrative
Detailed Budget Form
Performance Measures



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Environmental Setting and Impacts
Project Location Map
Parcel Map Showing County Assessors Parcel Number
Topographic Map
Photos of the Project Site
Land Tenure- Only for Site Improvement Projects
Letters of Support

To preserve the integrity of the uploaded document, headers, footers and page numbers have not been added by the system.

# **Application Checklist for Category Two Grants**

Project Name: Humbug Creek Watershed Assessment and Management Plan

Applicant: The Sierra Fund

Please mark each box: check if item is included in the application; mark "N/A" if not applicable to the project. Please consult with SNC staff prior to submission if you have any questions about the applicability to your project of any items on the checklist. All applications must include a CD including an electronic file of each checklist item, if applicable. The naming convention for each electronic file is listed after each item on the checklist. (Electronic File Name = EFN: "naming convention". file extension choices)

- 1. \( \subseteq \) Completed Checklist (EFN: Checklist.doc,.docx,.rtf, or .pdf)
- 2. A Table of Contents (EFN: TOC.doc,.docx,.rtf, or .pdf)
- 3. Application Form (EFN: AppForm.doc, .docx, .rtf, or .pdf)
- 4. Authorization to Apply or Resolution (*EFN: Artlnc.doc, .docx, .rtf, or .pdf*)
- 5a. Articles of Incorporation [501(c)(3)s only] (EFN: ArtInc.doc, .docx, .rtf, or .pdf)
- 5b. Bylaws [501(c)(3)s only] (*EFN: Bylaws.doc, .docx, .rtf, or .pdf*)
- 5c. Tax Exempt Status letter from the Internal Revenue Service [501(c)(3)s only] (EFN: ProjSum.doc, .docx, .rtf, or .pdf)
- 6. Project Summary (Two Page Maximum) (EFN: ProjSum.doc, .docx, .rtf, or .pdf)
- 7. Evaluation Criteria Narrative (EFN: EvalCrit.doc, .docx, .rtf, .pdf)
- 8. Detailed Budget Form (EFN: Budget.xls, .xlsx)
- 9. Performance Measures (EFN: Perform.doc, .docx, .rtf, or .pdf)
- 10. Environmental Setting and Impacts (EFN: EnvSetImp.docs, .docx, .rtf, .pdf))
- 11. Project Location Map (EFN: LocMap.pdf)
- 12. Parcel Map showing County Assessor's Parcel Number(s) (EFN: ParcelMap.pdf)
- 13. Topographic Map (EFN: Topo.pdf)
- 14. Photos of the Project Site (10 maximum) (ENF: Photo.jpg, .gif)
- 15. ☐ Land Tenure (EFN: Tenure.pdf)
- 16. N/A Leases or Agreements (EFN: LeaseAgrmnt.pdf)
- 17.N/A California Environmental Quality Act (CEQA) (EFN: CEQA.pdf)
- 18. N/A National Environmental Policy Act (NEPA) (If applicable) (EFN: NEPA.pdf)
- 19.N/A Regulatory Requirements / Permits (ENF: RegPermit.pdf)
- 20. Demonstrations of Support (EFN: DOS.pdf)
- 21.N/A Executive Officer Authorization Request Form (*only* for time-sensitive projects up to \$50,000) (*EFN*: *EOrequest.pdf*)

SNC SOG II Proposal: Humbug Creek Watershed Assessment and Management Plan Page 1

#### Table of Contents **Humbug Creek Watershed Assessment and Management Plan** Section Page Completed Checklist 1 Table of Contents 2 Application Form 3-4 3 Authorization to Apply or Resolution 5-6 4 Articles of Incorporation 5a 7 8-17 Bylaws 5b Tax Exempt Status letter from the Internal Revenue Service 18 5c **Project Summary** 19-20 **Evaluation Criteria Narrative** 21-31 7 Detailed Budget Form 32-33 8 Performance Measures 34-35 **Environmental Setting and Impacts** 36-37 10 38 Project Location Map 11 Parcel Map showing County Assessor's Parcel Numbers 39 40 Topographic Map Photos of the Project Site 41-50 Land Tenure 51 15 **Demonstrations of Support** 52-59

# SIEDDA NEVADA CONSEDVANCY

PROPOSITION		APPLICATION		
				Rev. January 2010
	ns on both pages			
1. PROJECT NAME Humbug Creek Watershed Assessment a Management Plan	nd	2. REFEREN	CE NUMBER	
3. APPLICANT (Agency name, address, and zip code) The Sierra Fund		4. APPLICAN  Non-profit (	Organization	☐ Government
5. APPLICANT'S AUTHORIZED REPRES  Name and title – type or print  ☐Mr.		one	Email Ad	ldress
⊠Ms. Elizabeth "Izzy" Martin		265-8454 x11	izzy.martin	@sierrafund.org
6. PERSON WITH DAY-TO-DAY RESPO (If different from Authorized Representativ Name and title – type or print   Mr.	/e)	OR ADMINISTR	ATION OF TH	IE GRANT
⊠Ms. Carrie Monohan, Ph.D.	(530)	265-8454 x14	carrie.mono	han @sierrafund.org
7. PERSON WITH FISCAL MANAGEMEI different from Authorized Representative of Name and title – type or print  Mr.	or Day to Day Pho	Administrator) one	Email Addre	ess
	)) 265-8454 x1	2	emily.rivene	s @sierrafund.org
8. FUNDING INFORMATION SNC Grant Request (Up to \$250,000) Other Funds	\$_197,592 \$_37,500			
Total Project Cost	<u>\$_235,092</u>			
9. PROJECT CATEGORY  Pre-Project Planning		DELIVERABLE Study/Report Appraisal Condition Asses Preliminary Title CEQA/NEPA Co Biological/Other Environmental S	sment   Report   Impliance Survey(s)	primary deliverable) Data Plan Model/Map Design/Permit
<b>10. PROJECT ADDRESS/LOCATION</b> (In 21625 and 22270 N. Bloomfield-Granitevia			9	
11. Latitude and Longitude 39.3536367296017 / -120.923905505748	<u> </u>			

12. COUNTY Nevada County **13. CITY** (Is project within city limits? If so, which one?) N/A

14. NEAREST PUBLIC WATER AGENCY (OR AGENCIES) CONTACT INFORMATION:		
14. NEARLOTT OBEIG WATER AGENOT (OR	ACENCIES, CONTACT IN CRIMATION.	
Name: Nevada Irrigation District	Phone Number: (530) 273-6185	
Email address: Ron Nelson, General Manager,	nelson@nidwater.com	
Name: Yuba County Water Agency	Phone Number: (530) 741-6278	
Email address: Curt Aikens, General Manager,	•	
<b>15. CEQA OR NEPA DOCUMENT TYPE</b> (if ap	· · · · · · · · · · · · · · · · · · ·	
Notice of Exemption	Finding of No Significant Impact	
Negative Declaration	Environmental Impact Statement	
Environmental Impact Report	☐ Joint CEQA/NEPA Document	
16. State Clearinghouse Number		
N/A		
17. Executive Officer Authorization		
Is an EO Authorization being requested:	☐ Yes	
I certify that the information contained in the App	lication, including required attachments, is accurate.	
1-0-1		
8/12		
( Change of the contract of th	September 10, 2010	
Signed (Authorized Representative)	Date	
Elizabeth "Izzy" Martin, Chief Executive Officer		
Name and Title (print or type)		

#### Board of Directors of The Sierra Fund Resolution Approving the Application for Grant Funds

For The Sierra Fund's Humbug Creek Watershed Assessment & Management Plan

To the California Sierra Nevada Conservancy Grant program

The following resolution was duly passed by the Board of Directors of The Sierra Fund at a regular meeting held September 8, 2010 by the following vote:

Ayes:

Feldman, Harvey, Laird, Meral, Regan, Thompson

Noes:

None

Abstentions: Brissenden Absent:

None

Signed and approved by:

John Regan, Secretary,

The Sierra Fund Board of Directors

WHEREAS, the Legislature and Governor of the State of California have provided Funds for the program shown above; and

WHEREAS, the Sierra Nevada Conservancy (SNC) has been delegated the responsibility for the administration of a portion of these funds through a local assistance grants program, establishing necessary procedures; and

WHEREAS, said procedures established by the Sierra Nevada Conservancy require a resolution certifying the approval of application(s) by the Applicant's governing board before submission of said application(s) to the SNC; and

WHEREAS, the Applicant, if selected, will enter into an agreement with the SNC to carry out the project; and

WHEREAS, The Sierra Fund has identified the Humbug Creek Watershed Assessment & Management Plan as valuable toward meeting its mission and goals.

BE IT HEREBY RESOLVED by the Board of Directors of The Sierra Fund that this Board:

- 1. Approves the submittal of an application for the Humbug Creek Watershed Assessment & Management Plan project; and
- 2. Certifies that Applicant understands the assurances and certification requirements in the application; and

- Certifies that Applicant or title holder will have sufficient funds to operate and maintain the resource(s) consistent with the long-term benefits described in support of the application; or will secure the resources to do so; and
- 4. Certifies that Applicant will comply with all legal requirements as determined during the application process; and
- Appoints Elizabeth Martin, CEO, or designee, as agent to conduct all negotiations, execute and submit all documents, including but not limited to: applications, agreements, payment requests, and so on, which may be necessary for the completion of the aforementioned project.

PASSED AND ADOPTED by the The Sierra Fund on the 8th day of September, 2010.

1,2364703

#### Articles of Incorporation

ENDORSED - FILED in the office of the Secretary of State of the State of California

The Name of this Corporation is The Sierra Fund.

NOV 0 8 2001

BILL JONES, Secretary of State

- A. This corporation is a Public Benefit Corporation and is not organized for the private gain of any person. It is organized under the Nonprofit Public Benefit Corporation Law for public and charitable purposes.
- B. The specific purposes of this corporation are: Create a permanent endowment to facilitate land acquisition, conservation, and community building in the Sierra Nevada; enhance the capacity of conservation organizations in the Sierra Nevada for managing planned gifts, endowments, and capital funds; create new private and corporate philanthropic resources directed to the Sierra Nevada; and advocate for permanent state and federal conservation monies directed to the Sierra Nevada; and advocate for permanent state and federal conservation monies directed to the Sierra Nevada Region.

Ш.

The name and address in the State of California of this corporation's initial agent for service of process is:

Shawn Garvey 202 North Pine Street Nevada City, CA 95959

- A. This corporation is organized and operated exclusively for charitable and educational purposes within the meaning of Section 501(c)(3) of the Internal Revenue Code.
- B. No substantial part of the activities of this corporation shall consist of carrying on propaganda, or otherwise attempting to influence legislation and the corporation shall not participate or intervene in any political campaign (including the publishing or distribution of statements) on behalf of any candidate for public office.

The property of this corporation is irrevocably dedicated to charitable purposes and no part of the net income or assets of this corporation shall ever inure to the benefit of any director, officer, or member thereof or to the benefit of any private person. Upon the dissolution or winding up of the corporation, its assets remaining after payment, or provision for payment, of all debts and liabilities of this corporation shall be distributed to a nonprofit fund, foundation, or corporation which is organized and operated exclusively for charitable purposes and which has established its tax exempt status under Section 501(c)(3) of the Internal Revenue Code.

Articles of Incorporation—The Sierra Fund

INTERNAL REVENUE SERVICE P. O. BOX 2508 CINCINNATI, OH 45201

Date: MAR 22 2006

THE SIERRA FUND 409 SPRING ST NEVADA CITY, CA 95959-0000 Employer Identification Number:
68-0485725

DLN:
17053063820066

Contact Person:
GREGORY S PAJDA ID# 31533

Contact Telephone Number:
(877) 829-5500

Public Charity Status:
170(b)(1)(A)(vi)

#### Dear Applicant:

Our letter dated Jauary 2002, stated you would be exempt from Federal income tax under section 501(c)(3) of the Internal Revenue Code, and you would be treated as a public charity, rather than as a private foundation, during an advance ruling period.

Based on the information you submitted, you are classified as a public charity under the Code section listed in the heading of this letter. Since your exempt status was not under consideration, you continue to be classified as an organization exempt from Federal income tax under section 501(c)(3) of the Code.

Publication 557, Tax-Exempt Status for Your Organization, provides detailed information about your rights and responsibilities as an exempt organization. You may request a copy by calling the toll-free number for forms, (800) 829-3676. Information is also available on our Internet Web Site at www.irs.gov.

If you have general questions about exempt organizations, please call our toll-free number shown in the heading.

Please keep this letter in your permanent records.

Sincerely yours,

Lois G. Lerner

Director, Exempt Organizations Rulings and Agreements

#### **PROJECT SUMMARY**

County: Nevada County
Applicant: The Sierra Fund

Project Title: Humbug Creek Watershed Assessment and Management Plan

#### PROJECT GOAL

The purpose of the Humbug Creek Watershed Assessment and Management Plan is to develop a plan and acquire necessary permits to implement recommended activities to address the problems of turbidity, mercury, and physical hazards in the Humbug Creek watershed that result from historic mining activities. This is an area of the popular Malakoff Diggins State Historic Park that was home to the largest hydraulic mine in the world. The goal of the Humbug Creek Watershed Assessment and Management Plan is to develop a comprehensive plan to address the water quality and safety impairments in the watershed, while maintaining the cultural significance and integrity of the site.

This project directly addresses several goals of the SNC and Prop 84, most prominently:

- <u>Protect, and restore the region's diverse resources</u> by increasing knowledge about the watershed's rich historical and cultural resources, and how to manage and protect them.
- <u>Improve water quality</u> by addressing existing threats of turbidity, mercury and acid mine drainage, which will improve the water quality of Humbug Creek and the South Yuba River, and lead to protection and restoration of downstream waterways, the Yuba and Feather River watershed, and associated natural resources.

#### PROJECT SCOPE

#### The project will:

- Compile existing knowledge on the ecosystem, habitat, human and natural environment in the Humbug Creek watershed in a pro-active, voluntary and collaborative way.
- Characterize and assess the current water quality conditions of the Diggins and Humbug Creek and evaluate their contribution to the water quality of the South Yuba.
- Evaluate and select the most effective and feasible actions to improve water quality in Humbug Creek, congruent with the natural habitat and resource management objectives and obligations of State Parks.
- Develop a comprehensive plan that specifies the recommended management techniques and actions, permitting requirements of any recommended actions, so that permitting can be completed and implementation is ready to proceed.

State Parks will be the key project partner for compiling information on the watershed, and producing a feasible assessment and management plan. The South Yuba River Citizens League (SYRCL) will contribute 10 years of water monitoring data in the watershed, and be the main partner to promote community involvement through watershed educational tours and activities.

The Mining Toxins Working Group, a team of experts with representatives from USGS, BLM, State Water Resources Control Board, Department of Toxic Substances Control, and local environmental

contractors will provide a forum for information gathering, project planning, and review of draft management plans to ensure a final result that can be used as an example for similar sites throughout the Sierra Nevada. The Sierra Fund will anchor these activities, manage grant administration, facilitate inter-agency coordination, acquire any needed permits, and draft and finalize assessment and management plan documents.

This project draws on strong in-kind support from its partners. Agency participation in the Working Group is entirely in-kind, totaling at least \$28,000 of staff time. SYRCL is contributing use of their water quality monitoring sites and their watershed coordinator, totaling \$7,500. Finally, The Sierra Fund will use outreach funds already received from The California Wellness Foundation to assist with public outreach for the project. SNC funds will be used to complete all other work described above.

## **LETTERS OF SUPPORT**

- CA State Parks
- South Yuba River Citizens League
- CA Dept. of Toxic Substances Control
- Larry Walker Associates
- Holdrege and Kull

## SNC PROJECT DELIVERABLES AND SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Draft Watershed Assessment for review by advisors	June 2011
Draft Management Plan for review by advisors	April 2012
Final Watershed Assessment and Management Plan	August 2012
Contracts for Permitting Activities	August 2012

#### **SNC PROJECT COSTS**

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
SECTION ONE: Direct Costs	
Staff/Personnel	\$52,760
Travel/Meeting	\$1,300
Contracts/Consultants	\$57,400
Materials/Supplies	\$900
Purchases	\$3,300
Permits	\$50,000
SECTION TWO: Indirect Costs	
Staff/Personnel	\$0
Outreach/Education	\$8,000
Performance Measure Reporting	\$1,200
SECTION THREE: Administrative Costs	
13% Overhead	\$22,732
SNC TOTAL GRANT REQUEST	\$197,592
SECTION FOUR: Other Project Contributions	\$37,500

## **Section 7: EVALUATION CRITERIA**

### A. Project Quality and Readiness

## 2. General Description

Malakoff was once the largest hydraulic mine in the world, and its 8,000 foot long drain tunnel (an engineering feat) emptied mine tailings into Humbug Creek, and then the South Yuba River. Today, Malakoff Diggins is a State Historic Park and the Humbug Creek Trail connects the park with the South Yuba Trail at the South Yuba River. Along the trail hikers are dazzled by waterfalls, swimming holes, historic mining relics including ditches, mine shafts, and rock walls. Most visitors know the Humbug Creek Trail as a great six mile round trip hike with an exhilarating 1,000 foot climb out of the canyon, but few visitors know that the watershed suffers following heavy rain falls. Sediment from the exposed and eroding mine workings, along with mercury, is mobilized by heavy rainfall and seasonally impacts the South Yuba River, a State designated and federally nominated Wild and Scenic River. Humbug Creek itself is listed under Section 303(d) of the Clean Water Act as impaired for sediment, mercury, copper and zinc. Copper and zinc are naturally occurring throughout the Yuba watershed, however mercury was introduced in the mining process to separate gold from the sediment and thousands of pounds were lost during mining operation processes.

The goal of the Humbug Creek Watershed Assessment and Management Plan is to develop a comprehensive plan to address the problems of turbidity, mercury, and physical hazards in the watershed that result from historic mining activities. The plan will honor the hydraulic mining history of the State Park, an innovative state of the art technology at the time, while paving the way towards a new day that does not include water quality impairments to our treasured waterways.

The Science and Technology Committee of The Sierra Fund's Mining Toxins Working Group will be the technical advisors and reviewers of this plan. The Working Group consists of a team of experts on water quality issues including representatives from state and federal agencies, universities, and environmental consulting firms. These individuals are experts in their field, and have a strong working relationship with The Sierra Fund (TSF). They have served as advisors to TSF's Mining's Toxic Legacy Initiative for over four years.

#### **Partner Roles**

TSF will convene the Working Group, draft watershed assessment and management plan documents, and facilitate involvement of CA State Parks. State Parks will attend Working Group meetings, will assist TSF staff get up to speed on the site history, and participate in the educational watershed excursion to Humbug Creek. The Working Group, including representatives from State Parks, will provide

Mining Toxins Working Group		
Science and Technology Committee		
Randy Adams	Department of Toxic Substances	
	Control (DTSC)	
Dr. Charles Alpers	US Geological Survey (USGS)	
Peter Graves	Bureau of Land Management	
	(BLM)	
Rick Humphreys	State Water Resources Control	
	Board	
Victor Izzo	Central Valley Regional Water	
	Quality Control Board	
Stephen McCord	Larry Walker Associates and	
	Delta Tributaries Mercury	
	Council	
Jason Muir	Holdrege and Kull	
Sarah Reeves	Department of Conservation,	
	Abandoned Mine Lands Unit	
Rick Weaver	US Forest Service, Abandoned	
	Mine Land Unit	
Dr. Carrie Monohan	Mining Project Science Director,	
	The Sierra Fund	

technical expertise and review of the Watershed Assessment and Management Plan for Humbug Creek. The South Yuba River Citizens League (SYRCL) will engage volunteer monitors, provide existing monitoring data and lead watershed excursions to visit Humbug Creek. Environmental permitting contractors will be hired as necessary for special studies.

Methods used to accomplish the project include: facilitated meetings, promotion of a collaborative working environment, historical research with State Parks and other local agencies, document draft and review process with expert advisors, and hiring of contractors for any necessary permitting activities.

#### **Related Activities**

For the last 10 years, SYRCL has been collecting water quality data from three sites on Humbug Creek, and two sites on the South Yuba River immediately upstream and downstream from the creek. This and other research efforts such as the Upper Yuba Studies Program sediment analysis and UC Davis turbidity and water quality data collection, will greatly accelerate the process to create a watershed assessment and management plan for Humbug Creek that is relevant to current conditions and effective.

On top of data collection, some work has been done to restore the watershed. More than ten years ago State Parks considered a variety of options to address the turbidity issues, including stabilizing the major source area for turbidity within the Diggins (a large landslide at the east end of the pit), different filtration options, and revegetation; however turbidity issues remain a concern. Previous studies and analysis will inform the Watershed Assessment and Management Plan to be developed in this project.

Finally, TSF has been building relationships with experts in this issue for the past five years, which has resulted in the panel of experts that make up the Working Group. This collaborative environment has proven effective in fostering discussion and inter-agency coordination.

Developing a Watershed Assessment and Management Plan for Humbug Creek is part of a long-term effort to manage this area more effectively. At the end of this first phase of the project the assessment and management plan will be complete, and permitting for any selected actions completed, with any selected projects "shovel-ready" to improve water quality and natural resources in the watershed.

Humbug Creek Watershed Assessment efforts are timely because USGS and BLM are working together to address the hydraulic mining debris on BLM lands along the banks of the South Yuba River at the confluence of Humbug Creek. Clean up and Abatement Funds from the State Water Resources Control Board are being sought for that project. The BLM-USGS effort will include characterizing the material that has accumulated at the confluence and stabilizing the material to reduce erosion and consequent downstream contamination. Staff from USGS, BLM, USFS and SWRCB support this Project.

#### **A Model for Other Sites**

In addition to restoring water quality in the Humbug Creek Watershed, this project will serve as a model in the larger effort to address the impacts of historic mining in the Sierra Nevada. The collaboration of various agencies and experts is crucial to addressing legacy mining watershed effects and contamination, since the pollution is widespread over state, federal and private properties. The Working Group process for creating a plan and involving all stakeholders will be a key model to address other sites throughout the Sierra Nevada. Additionally, the Humbug Creek watershed presents scientific challenges to remediate turbidity and mercury contamination. The plan and process developed by the Working Group will make planning and remediation of other sites on public lands more efficient and cost effective.

#### 3. Workplan and Schedule

## **Task 1: Working Group Activities**

The Working Group will meet a total of eight times, including an all day field trip to Humbug Creek which will take place in the Spring of 2011 following a storm event so that the members can see the site under saturated conditions. Other Working Group meetings will be all day meetings (8 hours) and will be held in Nevada City at TSF's office conference room, or elsewhere if appropriate. The meetings will be facilitated by TSF's CEO Elizabeth Martin, with assistance from Science Director Dr. Carrie Monohan. The meetings will include presentations on the topic being covered as well as plenty of time for discussion and open information sharing. The Working Group will also review draft documents and provide technical feedback on the documents at the meetings.

Assuming grant funding in March 2011, Working Group activities and focus will be as follows:

1.1	March 2011	Project kick off and Orientation meeting
1.2	April 2011	Field Trip to Humbug Creek
1.3	May 2011	Watershed history and conditions
1.4	September 2011	Review draft Watershed Assessment
1.5	January 2012	Discuss Management Plan
1.6	March 2012	Presentation of consultant bids
1.7	June 2012	Review draft Management Plan
1.8	August	Last meeting/Adopt final Watershed Assessment & Management Plan

Task 1 Deliverables	Timeline
Working Group Meeting materials, agenda, and notes	See meetings above
Working Group Field Trip	March-May 2011
Watershed Assessment Draft Revisions	June 2011
Management Plan Draft Revisions	April 2012

#### Task 2: Research and Review Existing Documents

The work that has already taken place in the Humbug Creek watershed will be collected and extensively reviewed by TSF Science Director with assistance from State Parks and others. Data on historic and existing water quality and hydrology will be analyzed by SYRCL scientists and presented to the Working Group. Results and review of existing documents will be used to draft the Watershed Assessment and develop proposed restoration activities to be included in the Management Plan.

Task 2 Deliverables	Timeline
Annotated Bibliography of existing documents	May 2011 Progress Report
Presentation on SYRCL Monitoring Data at Humbug Creek	May 2011

#### Task 3: Develop Watershed Assessment and Management Plan

TSF's Science Director Dr. Carrie Monohan will draft the watershed assessment and management plan documents and will disseminate for two rounds of review: first to a subset of Working Group members and State Parks for an "internal review" and second to the full Working Group. Working Group members will review these documents and provide comments and revisions back to Dr. Monohan for incorporation into the final documents. The Watershed Assessment will include a summary of historic uses of the watershed; current conditions including hydrology, vegetation, wildlife, and water quality; what groups and agencies have done there in the past; and the effect of Humbug Creek on the greater Yuba Watershed. The Management Plan will include general management goals, objectives, and strategies of

State Parks; as well as specific restoration actions and projects that could be done in the Humbug Creek watershed. These projects will be prioritized based on their anticipated benefits to the South Yuba Watershed, costs, and benefit to the State Park management goals.

Task 3 Deliverables	Timeline
Draft Watershed Assessment for Humbug Creek Watershed	June 2011
Draft Management Plan for Humbug Creek	April 2012
Final Watershed Assessment and Management Plan	August 2012

## **Task 4: Community Participation**

The greater community will be engaged through TSF's outreach and the SYRCL river monitoring program. SYRCL volunteers have monitored five sites at Humbug Creek for the last 10 years. Additional sampling will be needed to fill data gaps and volunteer assistance will be crucial to the success of this effort because storm water monitoring requires data from the sites when storm events begin and end. SYRCL will engage additional stakeholders in the assessment process through their Watershed Guild Initiative which includes conducting community based sub-watershed assessments and management plans throughout the watershed. SYRCL and State Parks will lead two Watershed Excursions to Humbug Creek for interested community members. The Watershed Excursions program is an outreach and education program that SYRCL began two years ago and has received avid community support and participation. In addition, TSF will use the Humbug Creek Watershed Assessment as a pilot project to their Mining Toxics Initiative and will include it in public outreach and education efforts.

Task 4 Deliverables	Timeline
River monitoring data	April 2011-August 2010
Watershed Guild materials	April 2011-August 2010
Watershed Excursions program	June 2011

## Task 5: Environmental Permitting and Compliance

The Management Plan will include selected options to maintain, restore and improve the conditions in Humbug Creek. These activities will be prioritized based on impact to the South Yuba Watershed, ease of implementation, cost, and ability to meet the management goals of the Park. Based on the selected restoration actions, environmental permitting consultants for any special studies that may be required for CEQA or NEPA will be hired on an as needed basis. State Parks would ideally utilize in-house resources and would ultimately be the fiscal lead for any future implementation projects.

Task 5 Deliverables	Timeline
Selected list of projects/activities	April 2012
Bids out for priority projects	March 2012
Special permit activities indentified and contracted	March 2012

#### Task 6: Project Administration and Management

The project team recognizes that project management and administration are critical to successful project implementation. Under this task, TSF will take the lead in contract oversight, overall management of work plan schedule and deliverables, fiscal management and invoicing, development of the semi-annual report and the final report, performance measure reporting, convening project team meetings, development and management of subcontracts.

Task 6 Deliverables	Timeline
Signed subcontracts with project partners	April 15, 2011
Quarterly reports	June 2011, Sept 2011, Dec 2011,
	March 2012, June 2012
Final report drafted	August 1, 2012
Final report finalized	August 30, 2012

#### **Project Timing**

Timing of tasks and deliverables are described above. Factors affecting the project timeline include availability of documents about the site, and effective participation of Working Group members. The timely completion of Stage 1 will depend on the time it takes to gather and review existing documents which will be determined by access to documents at State Parks. Document review will take about four weeks. Working Group effectiveness will depend on attendance and participation of workgroup members, who already have a history of being reliable and following though with commitments.

TSF staff will be responsible for preparing documents between meetings. Momentum will be maintained in the Working Group meetings and document development by clear structure of the project in three stages, and progress towards the final documents.

## 4. Budget

## **In-Kind Support**

This project enjoys the dedicated support of its partners, many of which have committed to donating funding, staff time or volunteers. A total of \$33,500 of in-kind support has been offered for this project.

Agency partners have donated the time and expertise of their representatives to attend the eight Working Group meetings, totaling more than 450 hours or \$24,000. Department of Toxic Substances control has offered \$14,000 in in-kind staff time, while other Working Group members have committed to attending quarterly meetings, for approximately \$10,000 more of in-kind staff time.

SYRCL will support this project with 20 years of river monitoring data at five sites, plus new data yet to be collected. Each site costs about \$500/year to maintain, for a total match of \$5,000 during this project. In addition, SYRCL will use \$2,500 of funds from their DOC Watershed Coordinator Position to support the Watershed Excursion trips, an in-kind contribution worth approximately \$7,500. TSF will contribute \$2,000 of in-kind support to public participation and outreach, and will use this project in their region-wide outreach as a great example of government, nonprofit and community coordination with funding from The California Wellness Foundation. No other funds are sought for this project.

## Use of Sierra Nevada Conservancy (SNC) Funds

Unless mentioned above, all tasks will be funded by SNC funding sought in this application, which will be sufficient to complete this project. At project completion implementation funds may be sought for, perhaps from future SNC grant opportunities. SNC grant funds will not be used as a match.

#### **Cost Effectiveness**

This project is extremely cost effective because it draws on the relationships, expertise and data of several partners that have been built over several years. Working Group members, all experts in the field of water quality or mine remediation, are providing their knowledge at no cost. TSF is bringing these individuals together based on constructive relationships established over the last four years. State Parks

brings unmatched knowledge of the project site, including historical and cultural resources, as well as staff time. SYRCL brings a trained volunteer monitoring force and 10 years of water quality data for the project site. A similar project done solely by consultants and DTSC would cost a million dollars or more.

#### 5. Status of agreements and land tenure

All partnerships and collaborations deemed essential for this project are established. The attached letters of support from project partners and Working Group members document their commitment to the project, and also the ability of partners to access the site for project activities.

#### Partners:

- State Parks (see letter describing access permission and commitment to project)
- South Yuba River Citizens League (see letter about roles)

The following are active members of the Working Group and have verbally expressed their support of this project. Additionally, certain members have submitted letters in support of this project.

- Larry Walker Associates (letter included)
- Holdrege and Kull (letter included)
- Department of Toxic Substances Control (letter included)
- Bureau of Land Management
- Regional Water Quality Control Board
- State Water Resources Control Board
- United States Forest Service
- Department of Conservation Abandoned Mine Lands Unit
- United States Geological Survey

#### **B. Proposition 84 Land and Water Benefits**

The purpose of developing a Humbug Creek Watershed Assessment and Management Plan is to identify, select and permit any specific future restoration projects that will have a direct improvement on the water quality in Humbug Creek and in the South Yuba River, and ultimately the state's drinking water supply. The future projects indicated in the Plan will directly lead to the restoration of the Humbug Creek and South Yuba watersheds and associated land, water and other natural resources by addressing the existing threats from historic mining-related activities.

Fine-grained sediments (silts and clays) are currently delivered to Humbug Creek from the hydraulic pit via Diggins creek, which flows during the rainy season. The turbidity levels for Diggins Creek vary dramatically, depending on storm duration and intensity. The principal source of the suspended clays (which lend a café au lait color to the creek) is a thick clay layer and associated active landslide at the eastern end of the hydraulic pit. In addition to turbidity problems, mercury, which was used extensively in hydraulic mining, travels downstream adsorbed to the sediment. There are also drain tunnels and vertical shafts along Humbug Creek, some of which fill up with water and emit a discharge to the Creek.

There will be several **immediate**, **direct benefits to the watershed**, which feeds into the State Water Project, once the future restoration projects are implemented:

- The clarity and water quality of the South Yuba River will improve, due to decreased suspended sediment which will benefit the aquatic habitat including amphibian and resident trout species.
- Reduced discharge from open adits and shafts would improve the water quality conditions in Humbug Creek, specifically its pH and iron concentration.

• Mercury bound to fine sediments carried into the South Yuba River annually will be reduced which has a direct benefit to the fishery.

This restoration has additional, indirect and long-term benefits. Cleaning up elemental mercury in the upper Sierra watersheds will keep it from entering the food chain as methylmercury and accumulating in downstream fish. Methylmercury is a staggering problem both in Sierra fish, as well as fish in the San Francisco Bay-Delta, and all the way to the ocean. This project will serve as a model for cleaning up elemental mercury from historic gold mines throughout the Sierra, so the net benefit to the state's fish will be multiplied many times as mercury is removed from other watersheds.

The success of the Watershed Assessment and Management Plan will be an implementable management and restoration effort, with an engaged group of stakeholders. The success of future restoration projects would be measured as improvement in the natural resources health and water quality of Humbug Creek and the South Yuba River above and below the junction with Humbug Creek. As mentioned above, water quality monitoring equipment is already in place to measure this improvement. Another measure of success could be fish populations and fish and/or amphibian reproductive success.

#### **Performance Measures**

Performance measures related to this planning effort include measures 1, 2, 3, 4, 17 and 18. These performance measures will be used to measure project success and will be reported about in the progress reports. Details of the performance measures are included in a table in the Performance Measure section.

- 1. Number of People Reached.
- 2. Dollar Value of Resources Leveraged in the Sierra.
- 3. Number and Type of Jobs Created.
- 4. Number of new improved or preserved economic activities.
- 17. Number of Collaboratively Developed Plans and Assessments.
- 18. Percent of Pre-Project Planning Efforts Resulting in Project Implementation.

#### **Sustainability**

This project will address existing and potential impacts to the watershed, and recommendations for creating a sustainable restoration project, based on findings from the watershed assessment. Sustainable implementation of the future restoration project may include, for example, measures to reduce erosion throughout the watershed. The surrounding watershed is owned by State Parks so any actions identified in the management plan would ultimately require endorsements and support by the Park in order to be implemented and maintained by this agency.

#### **Climate Change**

Some climate change scenarios predict radical changes in precipitation events, duration, and frequency for the upper watershed in the Sierra Foothills region. One concern in these scenarios is increased erosion and turbidity, and increased runoff of contaminants from areas of historic mining. The future projects that come out of the Management Plan for Humbug Creek will protect water quality in Humbug Creek, the South Yuba River, and downstream waters especially during high flows.

#### **C. SNC Program Goals**

The Humbug Creek Watershed Assessment and Management Plan will result in direct benefits to four of the SNC program goals:

Provide increased opportunities for tourism and recreation. Malakoff Diggins State Historic Park is the site of California's largest hydraulic mine, and provides an unparalleled opportunity for visitors to experience the magnitude of mining's impact on the State. In fact, the nation's first environmental law, the Sawyer Decision, was centered on the prohibition of release of mining debris from the historic hydraulic mining activities of the North Bloomfield Mining Company in 1884. Highlights of the state historic park include sheer cliffs carved by mighty streams of water, a 7,847 foot bedrock tunnel that served as a drain for mining debris, and exhibits on life in the old mining town of North Bloomfield. The campground, Group Camp and cabin facilities are available for overnight visitors. Area school children visit the park each year to experience the gold mining era setting and to study California history. This project will showcase a pro-active effort by State Parks to define a new era of Park Management in which we can both honor the history of mining while building a safer future through addressing the legacy impacts of that mining. The project will also address physical hazards such as open shafts and adits along the Park's popular Humbug Creek Trail, improving safety of visitors.

**Protect, conserve, and restore the region's physical, cultural, archaeological, historical, and living resources.** The Humbug and South Yuba watersheds support fish and wildlife habitat for some sensitive, threatened and endangered species. In addition, it is one of the most highly impacted watersheds from historic gold mining in the Sierra Nevada – leaving a legacy of rich historical and cultural resources as well as contamination and environmental degradation. The project will ensure that natural resources are protected and restored and cultural and exemplary historical resources are preserved, while their negative impacts are mitigated.

**Protect and improve water quality.** This project will advance management and restoration efforts that will address existing threats of turbidity, mercury and acid mine drainage, and improve the water quality of Humbug Creek and the Yuba River, an important contributor to the state's drinking water supply.

*Undertake efforts to enhance public use and enjoyment of lands owned by the public.* Public use of the Humbug Creek Watershed is currently negatively impacted by the presence of seasonally turbid water, drainage from vertical shafts, as well as the physical hazards of open shafts and adits. This project will enhance public use in the Humbug Creek watershed by improving the aesthetic value of the experience, and ensuring physical safety.

#### **D.** Cooperation and Community Support

There is strong community support for this project, Malakoff Diggins State Historic Park, and the South Yuba River. The South Yuba River is valued as the area's greatest natural treasure by thousands of locals. There are nearly half a million visitors each year to the South Yuba. Over the past 12 years, over 4,800 community members have turned out for the Great Yuba River Cleanup. A volunteer force of over 700 conducts various cleanup and monitoring activities with SYRCL. Volunteer river monitors have collected water quality data at Humbug Creek, Diggins Creek and the South Yuba confluence for 10 years.

Malakoff Diggins State Historic Park is a popular destination for the community. Locals visit bringing out-of-town visitors to see the moonscape that is left from hydraulic mining. Community members are familiar with the park from a young age—local schools lead field trips to the Park as part of the 4<sup>th</sup> grade curriculum. They learn about the world's largest hydraulic mine that devastated the landscape and led to the first environmental law in the country. Finally, the Humbug Creek Trail, featured destination in several local and regional hiking guides is considered among California's premier trails. Restoration activities in the watershed, and especially alleviation of physical hazards and mine drainage will

significantly improve the experience of visitors to this park.

Additionally, thousands of people swim, fish and hike at downstream swimming holes in the South Yuba River State Park. Improved water clarity will improve their experience. However, more importantly, removing mercury from the aquatic environment will improve the fishery and subsequently human health. Methylmercury is a powerful neurotoxin that accumulates in fish, which when eaten can cause developmental delays in children.

Project support is also demonstrated by the continued voluntary in-kind match through participation in the Working Group by numerous state and federal agency employees, as well as local engineering and consulting firms. Committed, steadfast Working Group members include the Regional Water Quality Control Board, State Water Resources Control Board, US Forest Service, BLM, USGS, California Dept. of Conservation Abandoned Mine Lands Unit, Holdrege and Kull, and Larry Walker Associates.

Since this project is an excellent example of collaboration and land management, and is in an iconic and well known location, it will be highlighted as a pilot project at the annual conference addressing historic mining impacts in the Sierra. *Reclaiming the Sierra: A Community Summit on Mining* Impacts, to be held each fall in the Sierra, is open to the public. The Mining Toxins Working Group, Science and Technology Committee will present their efforts to evaluate remediation technologies for selected pilot projects. The Humbug Creek Watershed Assessment will cast light on California State Parks' proactive approach to address mining effects for the benefit of the community and the health of our shared natural resources.

Support letters for this Project from the following organizations, businesses and agencies are attached: DTSC, California State Parks Department, Larry Walker Associates, Holdrege and Kull, and SYRCL.

#### **Involvement of Stakeholders**

Participation of local, state and federal agencies began in 2006 when TSF held their first "charrette" to discuss the impacts of the Gold Rush on the Sierra Nevada, and how to address them. At this annual meeting over the last four years, members of local, state, federal and tribal governments have met with environmental and watershed groups and others to brainstorm a range of approaches to address the legacy effects, including pilot projects, policy development, funding mechanisms and public outreach.

Efforts have been made over the years to attract agencies not already involved. As a result, this group is inclusive of all agency representatives working to address historic mining impacts. Between meetings relationships have grown and developed and good working relationships now flourish between agencies working on abandoned mine and water quality issues related to the Gold Rush.

The Mining Toxins Working Group has now formed on the basis of these strong, long-standing relationships. The Science and Technology Committee of the Working Group consists of those individuals who wanted to work specifically on remediation issues for select pilot projects.

SYRCL is the link to community stakeholder involvement. SYRCL will involve the public in this project, and in particular youth, through Watershed Excursions to Humbug Creek and the Lower Yuba River, where hundreds of acres of hydraulic mining debris remain that were washed downstream from Malakoff Diggins and deposited there. SYRCL has been leading Watershed Excursions for years. In particular the Lower Yuba Salmon Tours have been attractive to schools and groups of children. On this mellow two mile float trip environmental educators explain the devastating effects of hydraulic mining and connection to Malakoff Diggins State Historic Park where much of the material originated.

As a part of this project, educators will also explain the State Park's efforts to address continued water quality impacts of hydraulic mining. In addition, a Watershed Excursion will be put together for Humbug Creek specifically, something that had not been done previously and will include the historical significance of hydraulic mining and its watershed impacts.

There is no known opposition to this project. The Mining Toxins Working Group welcomes the opportunity to address the ongoing problems at Humbug Creek and State Parks welcomes the assistance of a collaborative multi-stakeholder group to explore options for assessing and improving environmental conditions in the Humbug Creek watershed.

#### **Compatibility with Plans**

This project is compatible with several local and state plans including the Consumes American Bear Yuba (CABY) Integrated Regional Management Plan (CABY-IRWMP), South Yuba River Management Plan, Central Valley Regional Water Quality Control Board (CBRWQCB) Total Maximum Daily Load (TMDL) plans, and SYRCL Watershed Assessment of the Yuba.

Humbug Creek is within CABY-IRWMP. This project is consistent with CABY goals 5, 6, 7, 8 and 9.

- Goal 5: Protect and Improves Watershed Resources through Land Use Practices
- Goal 6: Mange Sediment for water Resources, Infrastructure and Habitat Value
- Goal 7: Reduce Mercury Contamination in Waterways
- Goal 8: Reduce Contamination in Surface and Groundwater
- Goal 9: Protect and Improve Fisheries and aquatic biota through water resource management

The CBRWQCB has issued a plan to develop a TMDL for mercury in the South Yuba watershed by 2022, in Humbug Creek for mercury by 2012, and for copper and zinc by 2020. Rather than wait for the Regional Board to impose assessment and planning efforts on the upper watershed land owners, the Humbug Creek project, a locally driven process on a sub-watershed, will inform this larger effort and establish collaborative working relationships between land owners and regulators.

In addition, SYRCL just completed a 21<sup>st</sup> century Watershed Assessment of the Yuba which identifies primary restoration efforts with citizen involvement. This Project directly addresses the priorities laid out by this larger watershed assessment for the Yuba.

#### **Communication of Benefits**

The benefits of a completed plan will be communicated to the public, local, state and federal agencies, and other organizations through TSF's Mining's Toxic Legacy Initiative outreach program, and the separate Outreach Committee of the Mining Toxins Working Group. This program includes direct community organizing, an email newsletter and targeted media strategy. The project will be showcased to encourage other agencies and organizations across the Sierra Nevada to collaborate on similar projects, and to leverage much greater state and federal funding to clean up abandoned mines and protect public health. The project will also be highlighted in the Initiative's public education presentations as a model of good stewardship on lands held in the public trust.

Additionally, the Humbug Creek Watershed Assessment Plan and future restoration or remediation projects will be highlighted at the annual *Reclaiming the Sierra* conference. This will provide the public, reporters, elected and agency officials from the Sierra Nevada and outside the region with a project update, and the opportunity to ask questions and give input.

#### E. Project Management

TSF will coordinate all partner and consultant activities, and provide project oversight and evaluation. TSF is an innovative community foundation for the environment. Since 2001, TSF has partnered with private donors and public agencies to increase and organize investment in the land, air, water and human resources of the Sierra Nevada. TSF serves as fiscal sponsor and manager for three ongoing SNC grants: the Deer Creek Watershed Assessment, the Yuba River Acquisition Project Phase I (complete) and Phase II. Additionally, TSF is currently providing fiscal sponsorship and project management for the \$ 912,000 grant from the Resources Agency to create a Tribute Trail in Nevada City.

#### **Qualifications of The Sierra Fund's Staff**

- Elizabeth "Izzy" Martin, CEO will oversee the project budget, contracts, and outcomes. Ms. Martin is a community organizer and environmental advocate with nearly thirty years of experience working in rural communities to promote economic and environmental justice. She served on Board of Supervisors in Nevada County where this project is located. Since becoming CEO of TSF in 2004, she has helped to leveraged more than \$90 Million for the Sierra Nevada.
- Carrie Monohan, Ph.D., Science Director will serve as the project's main coordinator. She will organize and hold Working Group meetings, facilitate activities with State Parks and SYRCL, as well as Working Group members. She will draft and finalize the Watershed Assessment and Management Plan for Humbug Creek. Dr. Monohan earned her Ph.D. in Environmental Hydrology from the University of Washington and has overseen the EPA Brownfields Assessment of Nevada City, and the Deer Creek Mercury Assessment and Restoration Plan.
- Emily Rivenes, Financial Manager handles invoices, billing and financial reporting. With more than 19 years experience in finance, Ms. Rivenes manages TSF's complex philanthropic services.

#### **Roles and Staff Qualifications of Fiscal Partners**

• Syd Brown, Sr. Engineering Geologist, CA State Parks: Ms. Brown is the technical lead for State Parks. She provides a critical connecting thread to the previous planning and management activities for the South Yuba River Watershed, Humbug Creek Watershed, and the Upper Yuba River Studies Program. She will coordinate with local field staff and provide access to more than 30 years of environmental and water quality information for the State Historic Park. State Parks will attend working group meetings, will assist TSF's staff get up to speed on the site history, will review draft and final Watershed Assessment and Management Plan documents, and participate in the educational watershed excursion to Humbug Creek.

Gary Reedy, Science Director, SRYCL will attend Working Group meets and will present the results of 10 years worth of citizen monitoring data from five monitoring sites, lead two Watershed Excursions to Humbug Creek, and will engage SYRCL's volunteer community in this project to do monitoring as needed. Mr. Reedy holds a MS in Fisheries from Humboldt State. He has consulted for a variety of watershed groups, developed an information system for publicly sharing watershed and fisheries data, has taught at College of the Redwoods and founded an ongoing volunteer-based fish survey program.

## **Project Budget Details** State of California - Sierra Nevada Conservancy

APPLICANT NAME: The Sierra Fund

SNC REF #: N/A

PROJECT TITLE: Humbug Creek Watershed Assessment & Management Plan

PROJECT TYPE (choose one): pre-project planning for restoration								
	o=\(					SNC Grant		
SECTION ONE: Direct Costs	QTY	UNIT*	UNIT COST	SORI	OTAL	Request		
Staff/Personnel Expense - Project Related Wages/Benefits								
Mining Science Project Director						40=000		
Carrie Monohan, PhD	474	Hrs	\$ 80	)	\$37,920	\$37,920		
Mining Project Director	<i>C</i> 4		<b>.</b>		d= 440	<b>65.440</b>		
Elizabeth Martin, CEO	64	Hrs	\$ 85		\$5,440	\$5,440		
TSF organize meetings (TSF admin staff)	128	Hrs	\$ 50	<u>' </u>	\$6,400	\$6,400		
Grant reporting, billing and admin	50	Hrs	\$ 60	1 (	\$3,000	\$3,000		
Travel/Meeting Expense - Project Related			Tota	<u> </u>	\$52,760	\$52,760		
						4		
TSF Staff Travel to Humbug Site	1000	Mi	\$ 0.50	)	\$500	\$500		
Agency Staff Travel to meetings & Site	8	Mtgs	\$ 100	)	\$800	\$800		
			Tota	ı	\$1,300	\$1,300		
Contracts/Consultants - Project Related								
Community Watershed Group (SYRCL)	76	Hrs	\$ 50		\$3,800	\$3,800		
State Parks	290	Hrs	\$ 80	) 9	\$23,200	\$23,200		
Agency Participation in Working Group (time)	148	Hrs	\$ 95	,	\$14,000	\$0		
Dept of Toxic Substances Participation	148	Hrs		1	\$14,000	\$0		
Larry Walker & Associates, Holdredge & Kull consultants			7 55	<u>'</u>	, = .,	7.5		
(participation and review)	464	Hrs	\$ 50		\$30,400	\$30,400		
(per dorpation and remove)			Tota	-	\$85,400	\$57,400		
Materials/Supplies - Project Related								
Planning Documents & Supplies	12	Hrs	\$ 75	\$	900	\$ 900		
			Tota	I \$	900	\$ 900		
Equipment Leases/Purchases - Project Dependent								
Lab costs (Brooks Rand Laboratorys)	30	Sample		\$	3,300	\$ 3,300		
Storm water monitoring (SYRCL)	200	Hrs			5,000	\$ -		
			Tota	I \$	8,300	\$ 3,300		
Fees - Appraisal/Permits/CEQA/Easement				1.				
Consultants and Fees	1	LS			50,000	\$ 50,000		
			Tota		50,000	\$ 50,000		
	DIR	ECT COST	S SUBTOTAL	: \$ 1	198,660	\$ 165,660		
				-				
				+				
				ļ				

				SNCG		Grant	
SECTION TWO: Indirect Costs	QTY	UNIT*	UNIT COST	SUBT	OTAL		uest
Staff/Personnel Expense - Wages/Benefits,/Consultants/	•		ONIT COST	ТООВІ	OIAL	КСЧ	uest
TSF Outreach and Communications	40		\$50		\$2,000	ċ	
131 Outreach and Communications	40	1113	· · · · · · · · · · · · · · · · · · ·		\$2,000	_	
Total Outreach/Education - Trainers fees/facilitators/Facility Expense				\$2,000	Ą		
Volunteer Engagement (SYRCL)	90	Hrs			\$5,000		¢E 000
Inter-Guild Coordination( SYRCL)	40	Hrs			\$2,500		\$5,000
			<u> </u>	\$	1,000	_	1,000
Watershed Excursions Program (SVRCL)	1 2	LS		\$		·	
Watershed Excursions Program (SYRCL)		LS	7 -,	<u> </u>	2,000		2,000
Pourformer on Management Pourouting (TCT)	1 20	Llua	Total		\$10,500		\$8,000
Performance Measure Reporting (TSF)	20	Hrs	60		\$1,200	_	\$1,200
			Total		\$1,200		\$1,200
			Other Total		\$13,700	\$	9,200
		Maintena	nce Subtotal:		4040.000		
0507101171055	ı	<u> </u>	Project Total		\$212,360	<b>\$</b> 1	L74,860
SECTION THREE							
Administrative Costs (Description - Not to exceed 15% o				1			
TSF 13% Overhead	13		\$ 22,732	\$	22,732		22,732
			ATIVE TOTAL	<u> </u>	22,732		22,732
	SNC T	OTAL GRA	NT REQUEST	\$	235,092	<b>\$</b> 1	197,592
	<u> </u>						
Project Budget Details							
State of California - Sie	rra Neva	ada Conse	rvancy				
APPLICANT NAME: The Sierra Fund							
SNC REF #: NA							
PROJECT TITLE: Humbug Creek Watershed Assessment &			an				
PROJECT TYPE (choose one): pre-project planning for re	storatio	n					
SECTION FOUR: OTHER PROJECT CONTRIBUTIONS	QTY	UNIT*	UNIT COST	Contr	ribution	Stat	tus
							fornial
	40		450	_ ا	2 000		lness:
TSF Outreach and Communications	40	Hrs	\$50	\$	2,000		irmed
				١.		in-ki	
Department of Toxic Substances	148	Hrs	\$95	\$	14,000	conf	irmed
						in-ki	
SYRCL Storm Water Monitoring & Inter-Guild work	25	Hrs	\$200	\$	7,500	conf	irmed
Other Working Group member Agencies: SWRCB, USGS,						in-ki	nd
DOC	148	Hrs	\$95	\$	14,000	conf	irmed
Total Otl							

## 9. Performance Measures

## **Humbug Creek Watershed Assessment and Management Plan**

Performance Measure	Target	Methodology
A1: Number of People Reached	20 community members will visit the site during a guided Watershed Excursion	SYRCL will organize and lead two watershed excursions to Humbug Creek open to the community and co-led by State Parks
	15 engaged watershed Guild stakeholders will get updates on the Humbug Assessment process	SYRCL gives updates on the Humbug Creek Assessment process at Watershed Guild meetings for other tributaries to the South Yuba
	500 community members throughout the Sierra will learn about the project	People will hear about the project at the Community Summit on Mining Toxins through Sierra Fund outreach efforts and by visiting the State Park
A2: Dollar value of Resources Leveraged for the Sierra Nevada	\$28,000	Working group expertise time spent advising the assessment process is a resource brought to the Sierra that will benefit watershed health.
A3: Number and Type of Jobs Created (*see table below for FTE specifics)	1 project manager 1 administrative staff	The project will require a manager, administrative support and facilitation. These jobs will be needed throughout the life of
	1 working group facilitation	the project (18 months). The table below estimates the FTE
	2 environmental consultants	created for each job during the SNC funded project.
		All jobs created as a part of the SNC project will have lasting impacts. Capacity and knowledge gained will help

		build a self sustaining movement to address Mining's Toxic Legacy in The Sierra Nevada and therefore will be maintained beyond the SNC project period.
A4: Number of new improved or preserved economic activities	1000 visits	State Park visitors to Malakoff Diggings number in the thousands each year. By preserving the park's ecosystem, resources and historic appeal this project will support the park's tourism function.
17. Number of Collaboratively	1 Watershed Assessment	These planning documents will be created by Sierra Fund staff
Developed Plans and Assessments	1 Management Plan	and be the result of working group members contributions.
18. Percent of Pre- Project Planning Efforts Resulting in Project Implementation	100%	The planning efforts are directed at producing shovel ready projects that implement the plan, and will be projects that can be submitted for SOG 1 funding.

* Occupation Group	Number of people	Length of employment	Average Number of	Total FTE	Employment Season
Group	employed	(weeks)	hours worked per week		Season
Manager	1	For 18 months= 72 weeks	20	0.69	All seasons
Administration	1	18 months = 72 weeks	5	0.17	All seasons
Facilitation	1	18 months = 72 weeks	8	0.27	All seasons
Environmental Consultants	1	6 months=20 weeks	30	0.28	All seasons

## 10. Environmental Setting and Impacts

#### **Humbug Creek Watershed Assessment and Management Plan**

The Assessment activities will include four parcels that are owned and managed by State Parks in the Humbug Creek watershed boundaries including the headwaters of Diggins Creek that originates in the hydraulic pit. Malakoff Diggins was the largest hydraulic mine in the world, where miners washed down hillsides using "water cannons" to get the gold. At capacity, water power at the mine could work 100,000 tons of gravel per day. To drain this enormous workings, the miners dug a 7,847-foot drainage tunnel through the bedrock from the Diggins pit to Humbug Creek in 1872. Eight vertical shafts were sunk at 1,000-foot intervals along the tunnel route, from which tunnel excavations were constructed.

The hydraulically excavated pit is about 6,800 feet long from southwest to northeast, and it ranges from 1,000 to 3,800 feet wide from north to south. Landslides and erosion have changed the profile of the pit from the days of active hydraulic mining. Sedimentary, igneous (mostly granite), metamorphic and volcanic rock surround the mined areas at Malakoff pit. More than 100 feet of eroded deposits have since accumulated on the pit floor, transforming its raw, u-shaped surface to a nearly-flat plane. Native vegetation has grown up through the once raw area, covering the pit floor with extensive, albeit sparse native cover.

The Diggins Tunnel (also called Hiller Tunnel) still transports eroding sediment from the pit into Humbug Creek. Humbug Creek descends approximately 1000 vertical feet to the confluence with the South Yuba River. Turbidity in Humbug Creek can range from 0-4000 NTUs following storm events in the winter and spring.

Humbug Creek watershed at Malakoff Diggins SHP contains second-growth ponderosa pine forest, incense cedar, black oak, white fir and sugar pine growing on its upper slopes. Whiteleaf manzanita is the park's most profuse woody shrub. Hillsides are covered with ceanothus, including buckbrush and deerbrush. Spectacular wildflowers bloom in the spring. Nocturnal animals such as black bears, mountain lions, coyotes and bobcats roam in the dark. Black-tailed deer can be seen during the day and flying squirrels can be seen at night. The park's bird species include the dark-eyed junco, mountain chickadee, California quail, Steller jay, black-throated gray warbler pileated woodpecker, western tanager, coopers hawk, sharp shinned hawk, great horned owl and mourning dove.

It is important to the protection of sensitive species to document their spatial-status, especially for diminishing populations of amphibians and reptiles. Surveys of Foothill Yellow Legged frogs, bull frogs and the California Newts were conducted on the tributaries of the Middle and South Yubas. (Yarnell 2000, Randell 1997). These surveys recommended that the habitat of Foothill Yellow-legged frogs and their use of tributaries should be studied in greater stream reaches on Spring, Rush, and Humbug Creeks. In addition, the bullfrog populations and the threat they create to the Foothill Yellow Legged Frog populations should be studied.

Environmental concerns such as sensitive habitat and species will be carefully evaluated in the course of the assessment that is part of this project. CEQA compliance and all other necessary permitting will also be completed for future implementation of the management plan.

#### **Primary Land Use**

Cultural Resource management and appreciation is the primary use of the area, which is classified as a State Historic Park and the town of North Bloomfield and surrounding mined properties is on the national list of historic districts. In addition to its extensive cultural and historical resources, Malakoff Diggins State Historic Park has abundant natural resource lands and more than 20 miles of scenic foothill trails with degrees of difficulty varying from easy to strenuous. The renowned South Yuba Trail connects to this park's trail network. Rainbow and brown trout can be caught in South Yuba River. A Kids' Fishing Derby is held in May, Humbug Day living history event takes place each June, and an Ice Cream Social celebrates September. Environmental Living programs are available to school groups. Land use at the Park will not change as a result of this project.

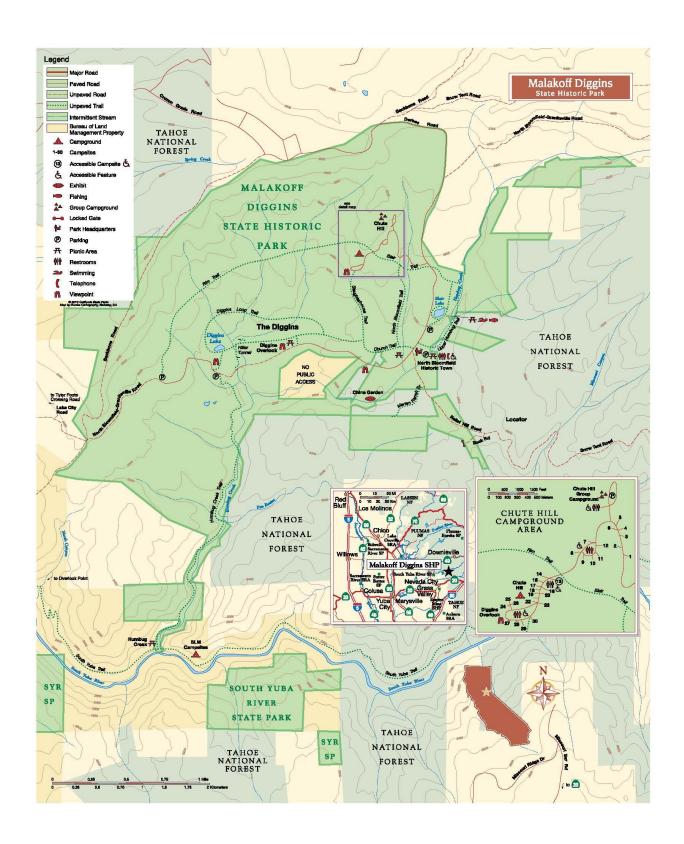
#### **Climate Change Impacts**

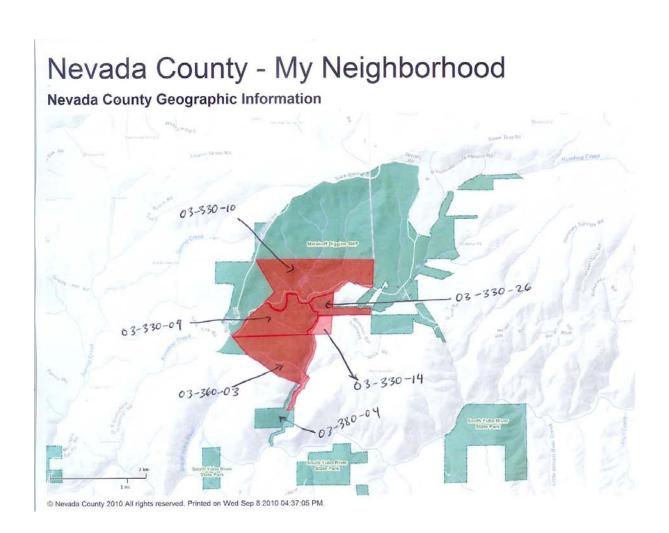
From October through April, the western slope of the Sierra receives between 40 and 60 annual inches of rainfall. Snow is common at higher elevations. Spring, summer and fall temperatures range from the high 50s to the mid-80s.

Some climate change scenarios predict radical changes in precipitation events, duration, and frequency for the upper watershed in the Sierra Foothills region. One concern in these scenarios is increased erosion and turbidity, and increased runoff of contaminants from areas of historic mining. This would only exacerbate the existing erosion and turbidity issues in the Humbug Creek watershed. Future projects that come out of the Management Plan for Humbug Creek will protect water quality in Humbug Creek, the South Yuba River, and downstream waters especially during high flows making the area more resilient in the face of climate change.

#### **Cultural Resources**

There are numerous cultural resources in the Humbug Creek Watershed which will be carefully considered throughout this assessment. For example, along the Humbug Creek trail, hikers can see historic mining relics including ditches, mine shafts, and rock walls, and upstream where Diggin Creek flows from the hydraulic pit, visitors can even walk through the Hiller Tunnel into the pit during low water flows. high water flows and energetic. Efforts to preserve the historical feel of these features will be taken while also addressing any safety concern associated with hazardous features, such as open tunnels and air shafts.





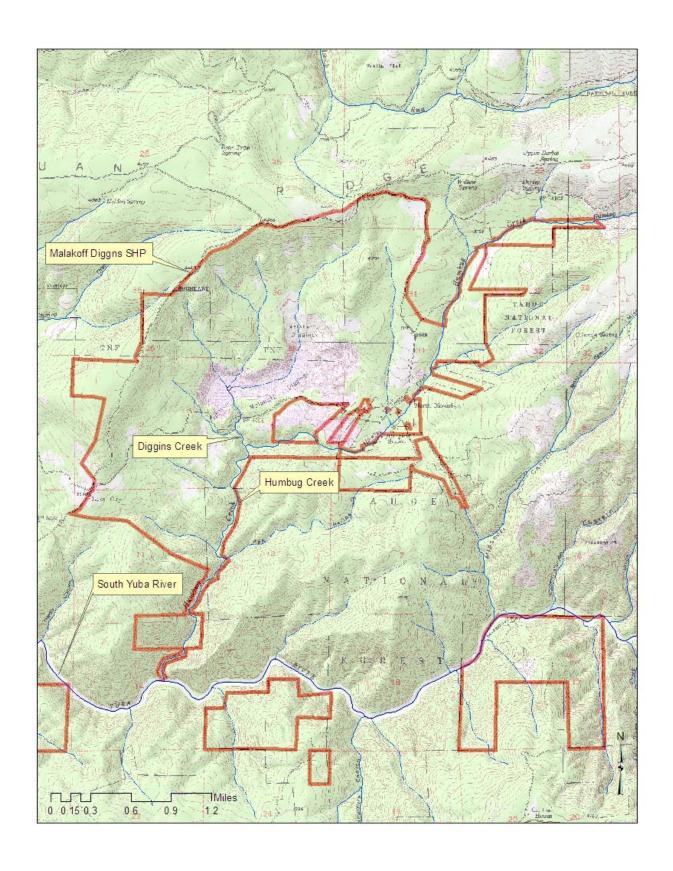




Photo 1: Hydraulic Mining at Malakoff Diggings (1890). "Piping four streams from monitors (giants), with aggregate discharge of 2,500 miner's inches at a hydraulic mine. Material is washed through bedrock cuts to the sluices which are not visible." Watkins Photo-Bancroft Neg. #8111

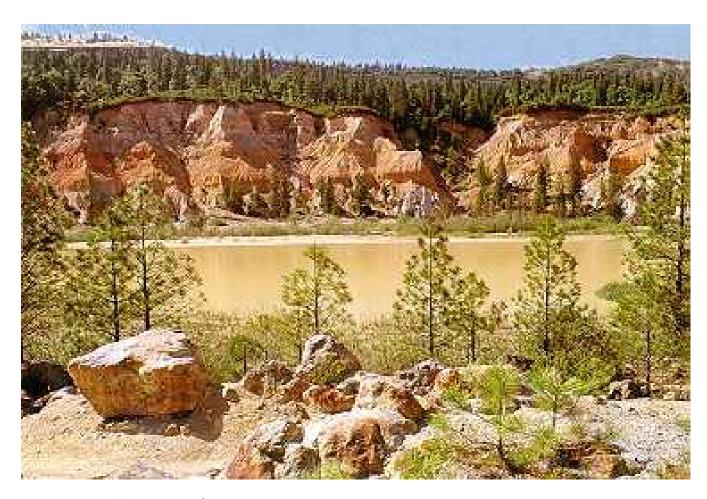


Photo 2: Malakoff Diggings pit/pond which drains to the Diggins Tunnel



Photo 3: Diggings Tunnel that drains Malakoff pond and flows into Humbug Creek (2/3/10)



Photo 4: Humbug Creek, below Diggings creek tunnel. (2/3/10)



Photo 5: Humbug Creek, below Diggings creek tunnel. (2/3/10)

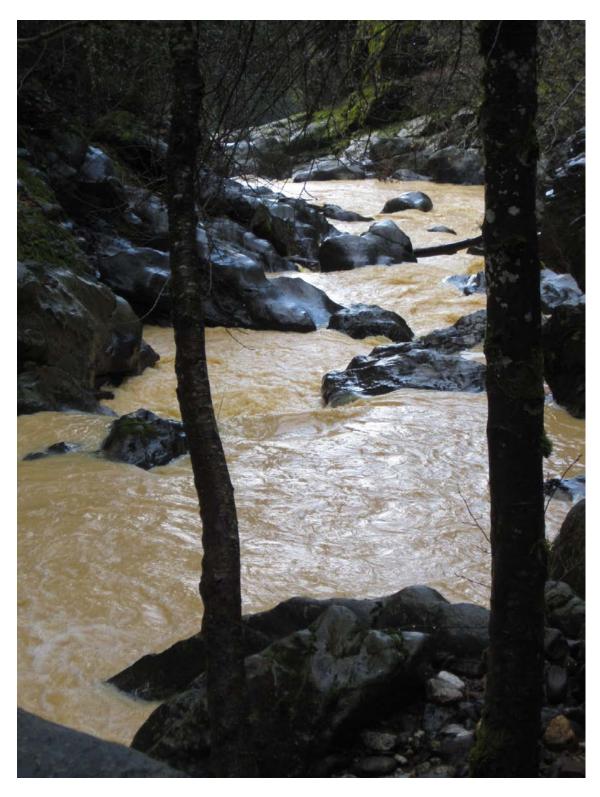


Photo 6: Humbug Creek, below Diggings creek tunnel. (2/3/10)



Photo 7: Frog in water that fills a vertical shaft, along Humbug Creek Trail. (2/3/10)



Photo 8: Humbug Creek Falls, below Diggings creek tunnel. (2/3/10)

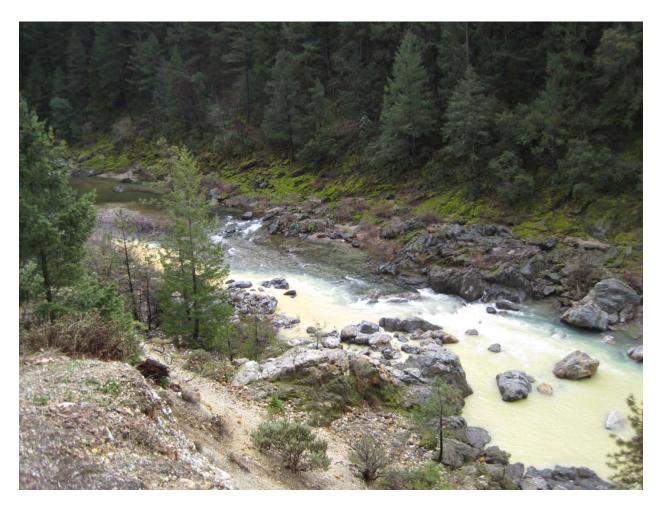


Photo 9: South Yuba River below Humbug Creek Confluence. Notice the clear water above the confluence (top left of the picture), and the mixing zone below the confluence. (2/3/10)



Photo 10: South Yuba River below Humbug Creek Confluence. Notice the turbid water continuing far below the confluence, it was turbid like this all the way to Edwards Crossing. (2/3/10)

### 15. Land Tenure

## **Humbug Creek Watershed Assessment and Management Plan**

The Humbug Creek Assessment and Management Plan project will take place on State Parks land in Malakoff Diggins State Historic Park, including parcels 03-330-09, 03-36-03, 03-330-10, and 03-330-09.

State Parks is involved in this project and has given The Sierra Fund and other project participants explicit permission to access the site in their Letter of Support, attached.

DEPARTMENT OF PARKS AND RECREATION • P.O. Box 942896 • Sacramento, CA 94296-0001

Ruth Coleman, Director

(916) 653-6725

September 13, 2010

Mr. Jim Branham, Executive Officer Sierra Nevada Conservancy 11521 Blocker Drive, Suite 205 Auburn, CA 95603

Re: Humbug Creek Watershed Assessment and Management Plan

Dear Mr. Branham

I am writing in support of The Sierra Fund's proposal to the Sierra Nevada Conservancy for the "Humbug Creek Watershed Assessment and Management Plan" to develop a comprehensive watershed assessment and management plan to address water quality and land management issues arising from legacy mining activities.

This project will advance watershed management and restoration efforts to address water quality improvements of Humbug Creek and the South Yuba River. The Humbug Creek Watershed Assessment and Management Plan will evaluate historic and on-going impacts to the watershed. The Management Plan will include general management goals, objectives, and strategies of State Parks as well as specific restoration actions and projects recommended for the Humbug Creek watershed. Final proposed actions will require full approval by California State Parks.

As the land owner and steward for Malakoff Diggins State Historic Park and the South Yuba River State Park, State Parks has statutory responsibility for the natural, cultural and recreational resource management of those areas. State Parks, through its Sierra Gold Sector field staff and Natural Resources Division technical staff, will cooperate in this planning effort, and will retain approval authority over any planning and restoration proposals affecting park management. We anticipate a successful partnership with the Sierra Fund to develop and formulate the watershed assessment and management plan for the Humbug Creek watershed.

The Sierra Fund has the permission from State Parks to enter our lands to conduct this project, which will occur on State Park lands inside of Nevada County, including the following specific parcel numbers: APN # 03-330-09 at 21625 N. Bloomfield-Graniteville Rd., APN # 03-36-03, APN # 03-330-70, and APN #03-330-10 at 22270 N. Bloomfield-Graniteville Rd.

Mr. Jim Branham September 13, 2010 Page Two

Thank you for your consideration of this important project. California State Parks is optimistic that this effort will result in a successful model of public land stewardship and collaborative efforts to better understand and sustain our precious natural and cultural resources.

Sincerely,

Jay Chamberlin

Chief, Natural Resources Division
California Department of Parks and Recreation
1416 Ninth Street, Suite 923
Sacramento, CA 95814

cc: Pam Armas
Syd Brown
Matt Green
Tamara Sasaki
Kathryn Tobias
Cyndie Walck



#### SOUTH YUBA RIVER CITIZENS LEAGUE

September 8, 2010

#### **Re: Humbug Creek Watershed Assessment and Management Plan**

To Whom it May Concern:

I am writing in support of The Sierra Fund's proposal to the Sierra Nevada Conservancy for SOG II Grant funding for the "Humbug Creek Watershed Assessment and Management Plan" to develop a comprehensive plan to address the water quality and safety impairments in Humbug Creek due to legacy mining activities.

This project will provide much-needed information on mining toxins in our local watershed and the region, as well as an effective process at developing remediation methods, and other solutions for cleaning up our legacy pollution. I am particularly impressed by the proposed approach of involving diverse local interests, thereby ensuring a complete and supported management plan.

SYRCL has been concerned about pollution from Humbug Creek into the South Yuba River since our conception 27 years ago. In designing our citizen-based water quality monitoring program in 2000, we placed four sites in the Humbug Creek watershed, as well as sites on the South Yuba River immediately above and below the confluence. While limited to inexpensive testing, our ten-year record of data strongly indicates the need for remediation. SYRCL hosted a public workshop on mining metals in our watershed in 2003, but a great deal of science and technology has since emerged. It is time to finally address this issue in a comprehensive manner.

We look forward to the opportunity to support the Sierra Funds leadership on this important planning process, and urge the Conservancy to fund this critical project for finally cleaning up the worst source of pollution in the South Yuba River.

Sincerely,

**Gary Reedy** 

River Science Program Director





Linda S. Adams Secretary for Environmental Protection

# Department of Toxic Substances Control



Arnold Schwarzenegger Governor

Maziar Movassaghi
Acting Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806

September 7, 2010

Ms. Elizabeth Martin Chief Executive Officer The Sierra Fund 432 Broad Street Nevada City, California 95959

LETTER OF SUPPORT FOR THE SIERRA FUND'S PROPOSAL TO THE SIERRA NEVADA CONSERVANCY FOR A STRATEGIC OPPORTUNITY CATEGORY TWO GRANT

Dear Ms. Martin:

I am writing in support of The Sierra Fund's proposal to the Sierra Nevada Conservancy for Strategic Opportunity, Category Two Grant funding for the project titled: "Humbug Creek Watershed Assessment and Management Plan". The goal of this project is to convene a team of experts on abandoned mine remediation techniques and water quality concerns for the purpose of developing a comprehensive plan that will address water quality and safety impairments in Humbug Creek due to legacy mining activities. Sierra Nevada Conservancy funds would be used to facilitate Science and Technology Committee (workgroup) quarterly meetings to develop a plan for this purpose.

This project will provide much needed information on mining toxins in Nevada County, remediation methods, and legal/regulatory concerns involved in the process of cleaning up legacy mining pollution. The involvement of many diverse, local interests and regulatory agencies in the project ensures a complete, realistic, and positive product that would protect the water quality of Humbug Creek and the South Yuba River downstream of the Creek.

The Department of Toxic Substances Control's (DTSC) mission is to provide the highest level of safety and protect public health and the environment from toxic harm, including

Ms. Elizabeth Martin September 7, 2010 Page 2

toxins resulting from abandoned mines. DTSC supports The Sierra Fund's proposal and will commit \$14,000 of in-kind services for our participation in the workgroup meetings associated with this project.

Sincerely,

Stewart W. Black, P.G.

Dlewart W. Black

**Acting Deputy Director** 

Brownfields and Environmental Restoration Program



September 8, 2010

Sierra Nevada Conservancy Proposition 84 Grants Program 11521 Blocker Drive, Ste. 205 Auburn, CA 95603

Reference: Humbug Creek Watershed Assessment and Management Plan

The Sierra Fund

Nevada County, California

Subject: Letter of Support

Grants Administration Team,

Holdrege & Kull (H&K) is pleased to support the Sierra Fund's *Humbug Creek Watershed Assessment and Management Plan* (the Humbug Creek Plan), and the application for a Category Two Grant from the SNC's Proposition 84 Grants Program. The purpose of the Humbug Creek Plan is to put to use the expertise of local and state organizations, as well as years of existing watershed data, to address current water quality and safety issues in Humbug Creek resulting from historic mining activity.

H&K is located in Nevada County and is a registered small business that specializes in hazardous materials site characterization and remedial design. Over the past sixteen years, we have assessed and remediated over 3,000 acres of abandoned mine land in the Northern Sierra Nevada alone. We are currently performing mine land assessment for the United States Forest Service and the Bureau of Land Management, and we are assisting with the DTSC's Arsenic Relative Bioavailability Study, which is funded by an EPA Region IX Brownfield Grant.

We are engineers and geologists with environmental and geotechnical expertise, both of which will be important aspects of the Humbug Creek Plan. From an environmental standpoint, we will assist with contaminant transport, exposure assessment and risk characterization associated with mining toxins such as methylmercury. From a geotechnical standpoint, we will provide expertise in physical mine closure, slope stabilization and sediment retention.

The pre-project planning activities proposed as part of the Humbug Creek Plan are intended to lead to restoration work that would also be eligible for funding under Proposition 84 criteria. In alignment with the SNC's mission, the Humbug Creek planning and remediation efforts are intended to improve the environmental, economic, and social well-being of the Sierra Nevada Region, its communities, and the citizens of California.

Thank you for your consideration of The Sierra Fund's proposed Humbug Creek Plan.

Sincerely,

**HOLDREGE & KULL** 

Jason W. Muir, P.E., G.E.

Principal Engineer

Thomas J. Holdrege, P.E., Z.E.G.

Founding Principal

F:\Proposals\Humbug\H&K Humbug Letter of Support.doc





#### Re: Humbug Creek Watershed Assessment and Management Plan

To Whom it May Concern:

I am writing in support of The Sierra Fund's proposal to the Sierra Nevada Conservancy for SOG II Grant funding for the "Humbug Creek Watershed Assessment and Management Plan" to develop a comprehensive plan to address the water quality and safety impairments in Humbug Creek due to legacy mining activities.

This project will provide much-needed information on mining toxins in Nevada County, remediation methods, and legal concerns in the process of cleaning up a legacy source of pollution. The involvement of many diverse, local interests and expertise in this project will ensure a coherent, implementable plan to protect the water quality of Humbug Creek and the South Yuba River downstream of the Creek.

My role in this project will be to provide technical expertise on water quality monitoring and analysis, particularly for mercury. As the facilitator of the Delta Tributaries Mercury Council (DTMC), I have reviewed countless proposals and project reports for mine site and water quality assessments and cleanup actions. I also facilitate a group of nonpoint sources in the Sacramento-San Joaquin Delta developing mercury control studies. This project is in line with the DTMC's Strategic Plan recommendation to collect useful pre-project monitoring data to quantify the water quality benefits of land-based remediation. As such, this plan and resulting cleanup actions will provide valuable information for the DTMC's nearly 500 participants throughout Northern California.

Thank you for your consideration of this important project.

Sincerely,

Stephen McCord, Ph.D., P.E.